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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/757,754	01/15/2004	Andrew P. Tybinkowski	56230-604 (ANAK-242)	4287

7590 02/02/2005  
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Boston, MA 02109

EXAMINER

THOMAS, COURTNEY D

ART UNIT	PAPER NUMBER
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2882

DATE MAILED: 02/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

01

<b>Office Action Summary</b>	Application No. 10/757,754	Applicant(s) TYBINKOWSKI ET AL.	
	Examiner Courtney Thomas	Art Unit 2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondenc addr ss --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 January 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Objections*

1. Claims 4 and 5 are objected to because of the following informalities:
2. Claims 4 and 5 respectively recite: "...the X-ray source is a dual energy, helical cone-beam, multi-slice CT system." ...the X-ray detector is a high efficiency, wide dynamic range ... X-ray detector array." Examiner notes that an X-ray source may be configured to provide X-ray radiation of differing energy levels (i.e. dual energy) as well as providing cone-beam shaped radiation output; however, the terms helical and multi-slice are associated with the operation of the CT system and not the source itself. With respect to the description of the detector, Examiner concludes the terms high efficiency and wide dynamic range are related to a range of degree and offer no patentable features that distinguish over a two-dimensional detector array employed in a CT system. Appropriate correction is required.

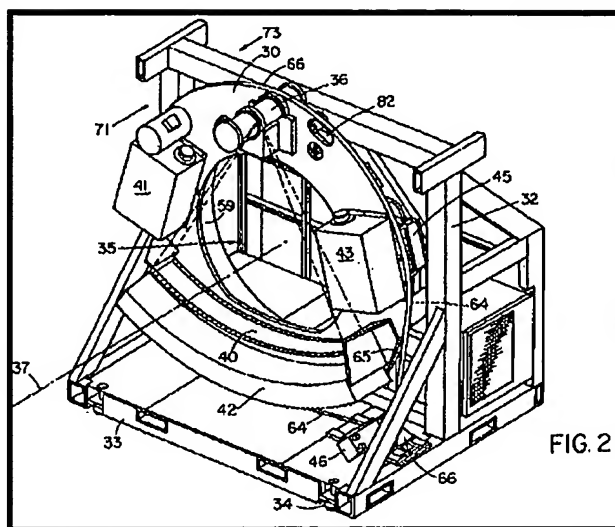
### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tybinkowski et al. (U.S. Patent 5,982,844) in view of Tybinkowski et al. (U.S. Patent 5,937,028).

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5.

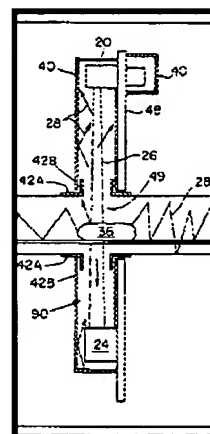
Figure 2 – U.S. Patent 5,982,844 to Tybinkowski et al.

6. As per claim 1, Tybinkowski et al. disclose a tomography scanner comprising: a base (33) a gantry supported on the base and including an outer, non rotating support ring (32) an inner rotatable component ring (30) supported for rotation on the support about a rotation axis of the gantry; an X-ray source (36) and an X-ray detector (40). Tybinkowski et al. do not explicitly disclose a scanner comprising an X-ray containment shield enclosing the X-ray source and detector and secured to the rotatable component ring (30) for rotation with the component ring.

[57]

**ABSTRACT**

In a computed tomography (CT) scanner, an X-ray shield is mountable to a gantry for absorbing randomly scattered X-ray radiation. The shield is rotatable with the gantry disk for regulating the emission of X-ray radiation near its source. The shield is preferably lined with an energy-absorbent material to provide safe energy levels in the environment external to the system. By minimizing the surface area of the shield, the present system results in significant weight reduction and ease of installation over prior shielding systems.



7.

Abstract &amp; Fig. 2 – U.S. Patent 5,937,028 to Tybinkowski et al.

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8. Tybinkowski et al. disclose a tomography scanner comprising an X-ray containment shield (40) enclosing the X-ray source (20) and detector (24) and secured to a gantry for rotation therewith (see Abstract and Fig. 2 above). Tybinkowski et al. teach that such arrangement absorbs randomly scattered radiation, while reducing the need to line an entire housing with lead as in prior art systems (column 2, lines 26-37). Additionally, Tybinkowski et al. also teach a scanner employing X-ray absorbing elements within the scanner to further reduce radiation exposure to the surrounding areas (column 3, lines 17-27).

9. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of Tybinkowski et al., such that it incorporated an X-ray containment shield enclosing the X-ray source and detector and secured to the rotatable component ring for rotation with the component ring. One would have been motivated to make such a modification for the purpose of absorbing randomly scattered radiation, while reducing the need to line an entire housing with lead as in prior art systems as suggested by Tybinkowski et al. (see Abstract and Fig. 2 above; column 2, lines 26-37).

10. **As per claim 2**, Tybinkowski et al. as modified above, disclose a tomography scanner wherein the component ring includes a mounting face extending perpendicular to the rotation axis and the X-ray source, the detector and X-ray containment shield are secured to the mounting face of the component ring (see Figs. 1 and 2 above).

11. **As per claim 3**, Tybinkowski et al. as modified above, do not explicitly disclose a motor mounted on the support ring.

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12. Tybinkowski et al. ('844) disclose a scanner wherein a motor (46) is mounted on the base (33) and is operatively connected to the component ring (30) through a belt (64) received in an outer circumferential groove of the component ring (see Figs. 6A, 6B).

13. It would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the scanner of Tybinkowski et al. such that a motor was mounted on the support ring. One would have been motivated to make such a modification for the purpose of avoiding collision with the rotating component ring as implied by Tybinkowski et al.

14. **As per claims 4-7**, Tybinkowski et al. as modified above, disclose a tomography scanner wherein the detector is a solid state, two dimensional X-ray detector; the X-ray source provides cone beam radiation (see Figs. above) and further comprising a data acquisition system (42) and X-ray tube control systems (column 4, lines 27-33).

15. **As per claims 8 and 9**, Tybinkowski et al. as modified above, disclose a tomography scanner wherein the material absorbent of X-ray incident energy comprises lead (Tybinkowski et al. ('028) - column 3, lines 37-43).

16. **As per claims 10-17**, Tybinkowski et al. as modified above, disclose a tomography scanner comprising a non rotating X-ray containment tunnel; wherein material absorbent of X-ray energy comprises lead and wherein open ends of the X-ray containment tunnels include curtains (30) of X-ray absorbent material (Tybinkowski et al. ('028) - column 3, lines 37-43) wherein the rotating X-ray containment shield includes an annular body defining diametrically opposed X-ray source and detector apertures.

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17. **As per claims 17-24**, Tybinkowski et al. as modified above, disclose a tomography scanner further comprising a conveyor system, (Tybinkowski et al. ('844) - **102**; Tybinkowski et al. ('028) - **32**) supported by pulleys and at least one motor (not numbered) for supporting baggage (Tybinkowski et al. ('028) - **36**).

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Courtney Thomas whose telephone number is (571) 272-2496. The examiner can normally be reached on M - F (9 am - 5 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on (571) 272 2490. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Courtney Thomas*

Courtney Thomas  
Examiner  
Art Unit 2882